IN THE CLAIMS:

1   1. – 5. (Cancelled)

1   6. (Currently Amended) A method of claiming ownership of a plurality of disks by a net-

2   work device of a plurality of network devices in a network storage system, comprising:

3   writing ownership information to a predetermined area of each disk, wherein the

4   predetermined area of the disk is sector 0 on the disk and the ownership information

5   stored in sector 0 is definitive ownership data for determining ownership of the disk;

6   setting a small computer system interface (SCSI) reservation tag for each disk to a

7   state of network device ownership to provide a two part indicia of ownership for each

8   disk, where the two part indicia of ownership are both written to each disk;

9   creating a table on each network device in the network storage system;

10   identifying all disks owned by each network device using ownership information

11   written to the predetermined area of each disk of the plurality disks and, for each identi-

12   fied disk, if a mismatch occurs between the ownership information on the predetermined

13   area of the disk and the ownership defined by the SCSI reservation tag, then using the

14   ownership information written to the predetermined area of the disk as definite ownership

15   data without requiring the owned network device to send a second SCSI reservation tag;

16   ~~and~~

17   in response to identifying, storing entries in the table, wherein each entry identi-

18   fies an owned disk of the network device storing the table;

19   identifying, by a second network device, all disks owned by a first network device

20   in response to a failure of the first network device, wherein each network device can read

21   ownership information of each disk;

22   setting a SCSI release tag for each disk owned by the first network device, in re-

23   sponse to the failure of the first network device, to transfer the disk to an unowned state;

24   and

4

25   removing ownership information stored in the predetermined area of each disk

26   owned by the first network device to complete transferring each disk into the unowned

27   state.

1   7. (Original) The method of claim 6 wherein the ownership information further com-

2   prises a serial number of a network device.

1   8. (Original) The method of claim 6, wherein the network device comprises a file server.

1   9. (Currently Amended) A network storage system comprising:

2   a plurality of network devices;

3   one or more switches, each network device connected to at least one of the one or

4   more switch;

5   a plurality of disks having a first ownership attribute written to a predetermined

6   area of each disk and a second ownership attribute in the form of a small computer sys-

7   tem interface (SCSI) reservation tag, wherein the first and second ownership attribute are

8   written to each disk, each disk connected to at least one of the plurality of switches, ,

9   wherein the predetermined area of the disk is sector 0 on the disk and the ownership in-

10   formation stored in sector 0 is definitive ownership data for determining ownership of the

11   disk;

12   each network device of the plurality of network devices identifies all disks owned

13   by that network device using ownership information written to the predetermined area of

14   each disk of the plurality disks and, for each identified disk, if a mismatch occurs be-

15   tween the ownership information on the predetermined area of the disk and the ownership

16   defined by the SCSI reservation tag, then using the ownership information written to the

17   predetermined area of the disk as definite ownership data without requiring the owned

18   network device to send a second SCSI reservation tag and each network device is config-

19   ured with a table and to store entries in a table, wherein each entry identifies an owned

20   disk of the network device storing the table.

1   10. (Cancelled)

1   11. (Previously Presented) The network storage system of claim 9, wherein the small

2   computer system interface reservation tag is a small computer system interface level 3

3   persistent reservation tag.

1   12. (Previously Presented) The networked storage system of claim 9, wherein the small

2   computer system interface reservation tag is set such that only the network device may

3   write to the disk.

1   13. (Previously Presented) The network storage system of claim 9, wherein the first

2   ownership attribute further comprises a serial number of the network device that owns

3   that particular disk.

1   14. (Previously Presented) The network storage system of claim 9, wherein each of the

2   plurality of file servers can read data from each of the plurality of disks.

1   15. (Previously Presented) The network storage system of claim 9, wherein only a net-

2   work device that owns one of the plurality of disks can write data to the one disk.

3   16. (Original) The network storage system of claim 9, wherein the network devices com-

4   prise file servers.

1   17. (Currently Amended) A network storage system comprising:

2   a plurality of network devices;

3   one or more switches;

4   a plurality of disks; and

5   means for writing ownership information to a predetermined area of each disk of

6   the plurality of disks, wherein the predetermined area of the disk is sector 0 on the

7   disk and the ownership information stored in sector 0 is definitive ownership data

8   for determining ownership of the disk;

9   means for setting a small computer system interface (SCSI) reservation tag of

10   each disk to provide a two part indicia of ownership, where the two part indicia of owner-

11   ship are written to each disk;

12   means for creating a table on each network device in the network storage system;

13   means for identifying all disks owned by each network device using ownership in-

14   formation written to the predetermined area of each disk of the plurality disks and, for

15   each identified disk, if a mismatch occurs between the ownership information on the pre-

16   determined area of the disk and the ownership defined by the SCSI reservation tag, then

17   using the ownership information written to the predetermined area of the disk as definite

18   ownership data without requiring the owned network device to send a second SCSI reser-

19   vation tag; and

20   in response to identifying, means for storing entries in the table, wherein each en-

21   try identifies an owned disk of the network device storing the table.

1   18. (Cancelled)

1   19. (Original) The network storage system of claim 17, wherein the network devices

2   comprise file servers.

1   20. (Currently Amended) A network storage system comprising:

2   one or more switches interconnected to form a switching fabric;

3   a plurality of disks, each of the disks connected to at least one of the switches,

4   each disk storing a first ownership attribute to a predetermined area of a disk and each

5   disk associated with a second ownership attribute in the form of a small computer system

6   interface reservation, wherein the predetermined area of the disk stores definitive owner-

7   ship data for determining ownership of the disk and the small computer system interface

8   reservation allows other network devices to read the ownership attribute from the disks;

9   and

10   one or more network devices, interconnected with the switching fabric, each of

11   the network devices being configured to own a predetermined set of disks of the plurality

12   of disks through use of the first and second ownership attributes, wherein each network

13   device identifies all disks owned by the network device using ownership information

14   written to the predetermined area of each disk of the plurality disks and, for each identi-

15   fied disk, if a mismatch occurs between the ownership information on the predetermined

16   area of the disk and the ownership defined by the SCSI reservation tag, then using the

17   ownership information written to the predetermined area of the disk as definite ownership

18   data <u>without requiring the owned network device to send a second SCSI reservation tag</u>

19   and each network device is configured with a table and to store entries in a table, wherein

20   each entry identifies an owned disk of the network device storing the table.

1   21. (Cancelled)

1   22. (Cancelled)

1   23. (Previously Presented) The network storage system of claim 20, wherein the first

2   ownership attribute further comprises a serial number of one of the one or more network

3   devices.

1   24. (Previously Presented) The network storage system of claim 20, wherein the small

2   computer system interface reservation is a small computer system interface level 3 persis-

3   tent reservation.

1   25. (Original) The network storage system of claim 20, wherein each of the network de-

2   vices further comprises a disk ownership table, the disk ownership table containing own-

3   ership data for each of the disks.

1   26. (Original) The network storage system of claim 25, wherein the ownership table fur-

2   ther comprises a world wide name for each of the disks, the world wide name being used

3   for identification of each of the disks.

1   27. (Currently Amended) A computer-readable storage medium containing executable

2   program instructions executed by a processor, comprising:, including program instruc-

3   tions executing on network device, for performing the steps of:

4   program instructions that writing write ownership information to a predetermined

5   area of a disk, wherein the predetermined area of the disk stores definitive ownership

6   data for determining ownership of the disk;

7   program instructions that setting set a small computer system interface reservation

8   tag for the disk to a state of network device ownership to provide a two part indicia of

9   ownership for the disk, where the two part indicia of ownership are both written to the

10   disk and the small computer system interface reservation tag allows other network de-

11   vices to read the ownership information from the disks;

12   program instructions that creating create a table on each network device in the

13   network storage system;

14   program instructions that identifying identify all disks owned by the network de-

15   vice using ownership information written to the predetermined area of each disk of the

16   plurality disks and, for each identified disk, if a mismatch occurs between the ownership

17   information on the predetermined area of the disk and the ownership defined by the SCSI

18   reservation tag, then using the ownership information written to the predetermined area

19   of the disk as definite ownership data without requiring the owned network device to

20   send a second SCSI reservation tag; and

21   in response to identifying, program instructions that ~~storing~~ store entries in the ta-

22 ble, wherein each entry identifies an owned disk of the network device storing the table.

1 28. (Currently Amended) A method for a network device to manage ownership of one

2 or more storage devices in a network storage system, comprising:

3   reading ownership information from a predetermined area of each storage device,

4 wherein the predetermined area of each storage device is sector 0 on the disk and the

5 ownership information stored in sector 0 is definitive ownership data for determining

6 ownership of the storage device;

7   in response to reading the ownership information, creating an ownership table that

8 stores entries where each entry identifies a storage device owned by the network device,

9 wherein the ownership is stored within the network device;

10   reading a small computer system interface (SCSI) reservation tag from each stor-

11 age device, wherein the SCSI reservation tag allows other network devices to read the

12 ownership information from each storage device;

13   comparing the SCSI reservation tag to the ownership information of the same

14 storage device and, if there is not a match, changing the SCSI reservation tag to match the

15 ownership information; ~~and~~

16   configuring the one or more storage devices identified in the ownership table into

17 at least one volume for use by the network device;

18   identifying, by a second network device, all storage devices owned by a first net-

19 work device in response to a failure of the first network device, wherein each network

20 device can read ownership information of each storage device;

21   setting a SCSI release tag for each storage device owned by the first network de-

22 vice, in response to the failure of the first network device, to transfer the storage device to

23 an unowned state; and

24   removing ownership information stored in the predetermined area of each storage

25 device owned by the first network device to complete transferring each storage device

26 into the unowned state.

1   29. (Previously Presented) The method of claim 28 further comprising:

2   setting ownership information at the predetermined area of each storage device.

1   30. (Previously Presented) The method of claim 28 wherein the step of configuring fur-

2   ther comprises:

3   organizing the one or more storage devices into at least one Redundant Array of

4   Independent Disks (RAID) group.

1   31. (Previously Presented) The method of claim 28 further comprising:

2   wherein the predetermined area of the one or more storage devices is sector zero

3   of the one or more storage devices.

1   32. (Previously Presented) The method of claim 28 further comprising:

2   wherein the ownership information is a serial number of the network device that

3   owns that particular storage device.

1   33. (Previously Presented) The method of claim 28 further comprising:

2   wherein the ownership table includes a world wide name for each of the storage

3   devices, the world wide name being used to identify each of the storage devices.

1   34. (Currently Amended) A network device for managing ownership of one or more

2   storage devices in a network storage system, comprising:

3   means for reading ownership information from a predetermined area of each stor-

4   age device, wherein the predetermined area of each storage device stores definitive own-

5   ership information for determining ownership of the storage device;

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6   in response to reading the ownership information, means for creating an owner-

7   ship table that stores entries where each entry identifies a storage device owned by the

8   network device, wherein the ownership is stored within the network device;

9   means for reading a small computer system interface (SCSI) reservation tag from

10   each storage device, wherein the SCSI reservation tag allows other network devices to

11   read the ownership information from each storage device;

12   means for comparing the SCSI reservation tag to the ownership information of the

13   same storage device and, if there is not a match, changing the SCSI reservation tag to

14   match the ownership information; ~~and~~

15   means for configuring the one or more storage devices identified in the ownership

16   table into at least one volume for use by the network device<u>;</u>

17   <u>means for identifying, by a second network device, all storage devices owned by a</u>

18   <u>first network device in response to a failure of the first network device, wherein each</u>

19   <u>network device can read ownership information of each storage device;</u>

20   <u>means for setting a SCSI release tag for each storage device owned by the first</u>

21   <u>network device, in response to the failure of the first network device, to transfer the stor-</u>

22   <u>age device to an unowned state; and</u>

23   <u>means for removing ownership information stored in the predetermined area of</u>

24   <u>each storage device owned by the first network device to complete transferring each stor-</u>

25   <u>age device into the unowned state.</u>

1   35. (Currently Amended) A computer readable <u>storage</u> medium containing executable

2   program instructions ~~for managing ownership of one or more storage devices in a net-~~

3   ~~work storage system, the executable program instructions~~<u>executed by a processor,</u> com-

4   prising<u>:</u> ~~program instructions for:~~

5   program instructions that ~~reading~~<u>read</u> ownership information from a predeter-

6   mined area of each storage device <u>of one or more storage devices in a network storage</u>

7   system, wherein the predetermined area of each storage device stores definitive owner-

8   ship information for determining ownership of the storage device;

9   in response to reading the ownership information, program instructions that creat-

10   ing create an ownership table stores entries where each entry identifies a storage devices

11   owned by the network device, wherein the ownership is stored within the network device;

12   program instructions that reading read a small computer system interface (SCSI)

13   reservation tag from each storage device, wherein the SCSI reservation tag allows other

14   network devices to read the ownership information from each storage device;

15   program instructions that comparing compare the SCSI reservation tag to the

16   ownership information of the same storage device and, if there is not a match, changing

17   the SCSI reservation tag to match the ownership information; and

18   program instructions that configuring the one or more storage devices identified

19   in the ownership table into at least one volume for use by the network device;

20   program instructions that identify, by a second network device, all storage devices

21   owned by a first network device in response to a failure of the first network device,

22   wherein each network device can read ownership information of each storage device;

23   program instructions that set a SCSI release tag for each storage device owned by

24   the first network device, in response to the failure of the first network device, to transfer

25   the storage device to an unowned state; and

26   program instructions that remoe ownership information stored in the predeter-

27   mined area of each storage device owned by the first network device to complete trans-

28   ferring each storage device into the unowned state.

1   36. (Currently Amended) A network storage system, comprising:

2   one or more storage devices, each storage device having a predetermined area for

3   storing ownership information and each storage device having a small computer system

4   interface (SCSI) reservation tag, wherein the predetermined area of each storage device

5   stores definitive ownership information for determining ownership of the storage device,

6   and the SCSI reservation tag allows other network devices to read the ownership infor-

7   mation from each storage device;

8   at least one network device having an ownership table constructed based upon

9   the ownership information from each storage device, wherein the ownership is stored

10   within the network device;

11   the at least one network device having an ownership layer for comparing the SCSI

12   reservation tag to the ownership information of the same storage device and, if there is

13   not a match, changing the SCSI reservation tag to match the ownership information; ~~and~~

14   the at least one network device having a disk storage layer for configuring the one

15   or more storage devices identified in the ownership table into at least one volume for use

16   by the network device; and

17   a second network device configured to identify all disks owned by a first network

18   device in response to a failure of the first network device, wherein each network device

19   can read ownership information of each disk, to set a SCSI release tag for each disk

20   owned by the first network device, in response to the failure of the first network device,

21   to transfer the disk to an unowned state, and to remove ownership information stored in

22   the predetermined area of each disk owned by the first network device to complete trans-

23   ferring each disk into the unowned state.

1   37. (Previously Presented) The network storage system of claim 36 further comprising:

2   the ownership layer adapted to set ownership information at the predetermined

3   area of each storage device.

1   38. (Previously Presented) The network storage system of claim 36 further comprising:

2   the disk storage layer organizing the one or more storage devices into at least one

3   Redundant Array of Independent Disks (RAID) group.

1   39. (Previously Presented) The network storage system of claim 36 further comprising:

2   wherein the predetermined area of the one or more storage devices is sector zero

3   of the one or more storage devices.

1   40. (Previously Presented) The network storage system of claim 36 further comprising:

2   wherein the ownership information is a serial number of the network device that

3   owns that particular storage device.

1   41. (Previously Presented) The network storage system of claim 36 further comprising:

2   wherein the ownership table includes a world wide name for each of the storage

3   devices, the world wide name being used to identify each of the storage devices.

1   42. (Previously Presented) The method of claim 6 wherein the small computer system

2   interface reservation tag and the ownership information at the predetermined area of the

3   disk indicate ownership by the same network device.

1   43. (Previously Presented) The method of claim 6 wherein the small computer system

2   interface reservation tag is a small computer system interface level 3 persistent reserva-

3   tion tag.

1   44. – 55. (Cancelled)